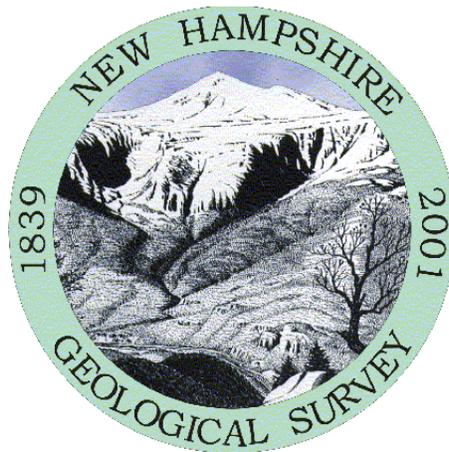


New Hampshire Groundwater Level Monitoring
September, 2020



New Hampshire Geological Survey
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

September 29, 2020

GROUNDWATER CONDITIONS SUMMARY

Neither NOAA nor the [Northeast Regional Climate Center](#) (NRCC) at Cornell University have released their September precipitation statistics, which are expected to be released next week and will be crucial data to consider during the current drought. In the absence of those summaries, NRCC reports that precipitation across New Hampshire between August 24th and September 22nd was much below average (Figure 1).

As of September 22nd, moderate drought affects 100% of the state with severe drought affecting 88.54% of the state. Extreme drought currently affects 8.47% of the state in the northern portion of the Seacoast region (Figure 2). Drought conditions expanded significantly since the end of last month.

Figures 1 and 2 show the monthly status of groundwater levels for both bedrock and overburden wells in the network. Only wells with a period of record (POR) 10 years or more are placed within statistical categories of low through high (symbols red through blue, respectively). Bedrock wells are installed into bedrock and overburden wells are installed in the unconsolidated materials above bedrock.

The majority of the state is experiencing below normal to low groundwater levels. Exceptions include normal conditions in one overburden well in Albany, the overburden well in Epping, the dug well in New London, the overburden well in Ossipee, and one bedrock well in Concord. All of the monitoring wells in the network show that groundwater levels are lower compared to last month and all but one (BAW-10 in Barnstead) are also below their monthly average over their POR (Table 1). Negative departures from average have been increasing in magnitude over the last 2-3 months in the overburden wells of Albany, Campton, Deerfield, Epping, Franklin, Greenfield, Nashua, and New Durham, and in the bedrock wells of Concord and East Kingston, and in the dug well in New London. Overburden wells in Newport and Lancaster have remained low for over a year due to early snowmelt events this Winter and Spring and low precipitation amounts ([see precipitation figures here](#)).

The New Hampshire Geological Survey's groundwater monitoring network (Figures 1 and 2) currently includes 11 bedrock and 20 overburden observation wells, all of which are measured monthly by hand. Using the monthly hand readings, monthly averages and percentile statistics were calculated and are summarized in Figures 1 and 2, the following hydrographs*, and in Table 1.

*The hydrographs show the following data over a period of 12 months: (1) monthly groundwater depths in red, (2) the monthly average over the period of record (POR) of the well in black, and (3) color-coded statistical ranges over the POR of the well. Note the POR is listed below each month's column on the chart and reported as the number of measurements for that respective month. This might include multiple readings in the same month and does not include any gaps in data so therefore may not represent a continuous period.

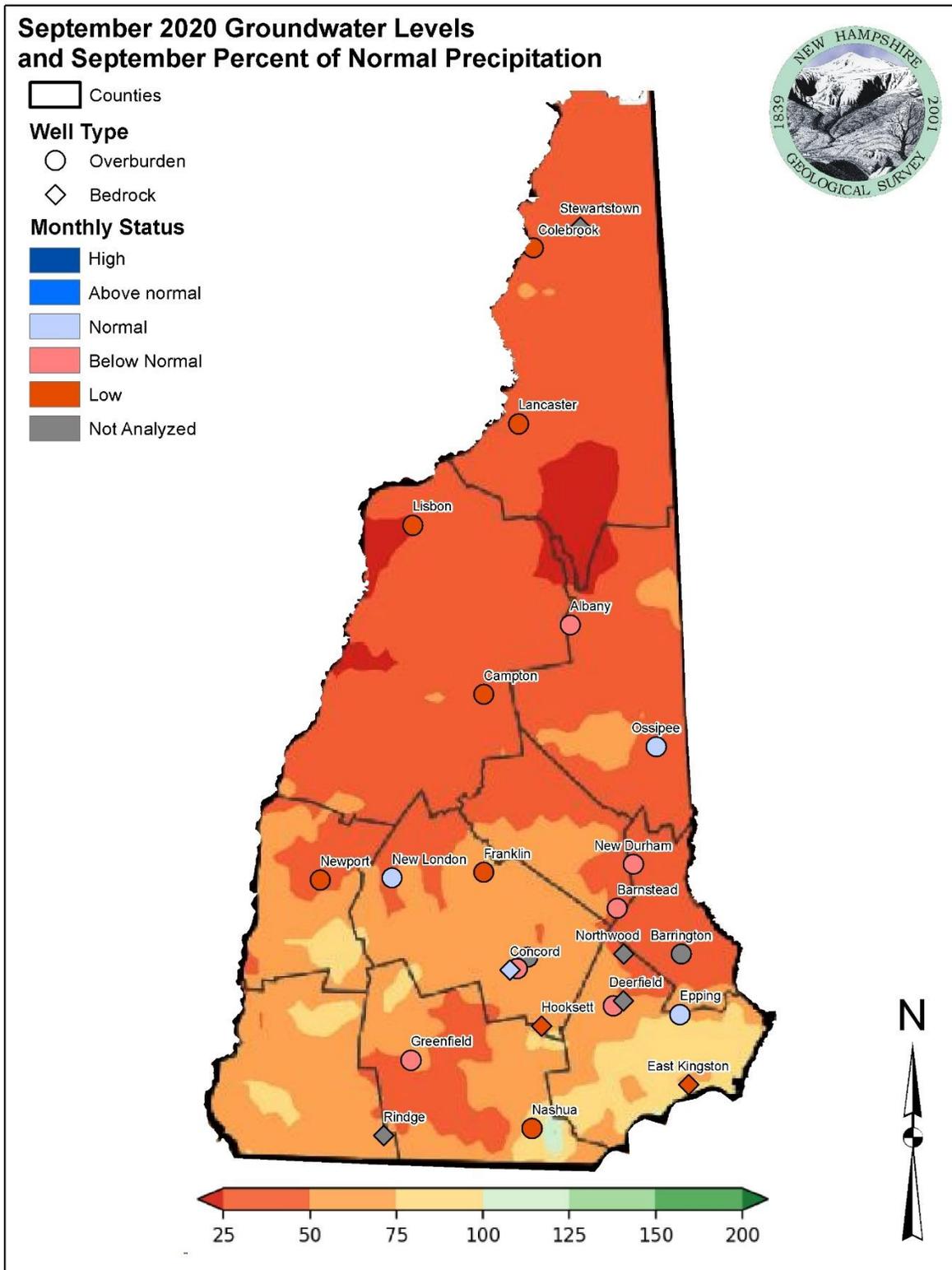


Figure 1. Groundwater Monitoring Network showing groundwater levels relative to statistical envelopes calculated over each well’s period of record (POR) and percent normal precipitation map for August 24 – September 22, 2020 ([Northeast Regional Climate Center](#)).

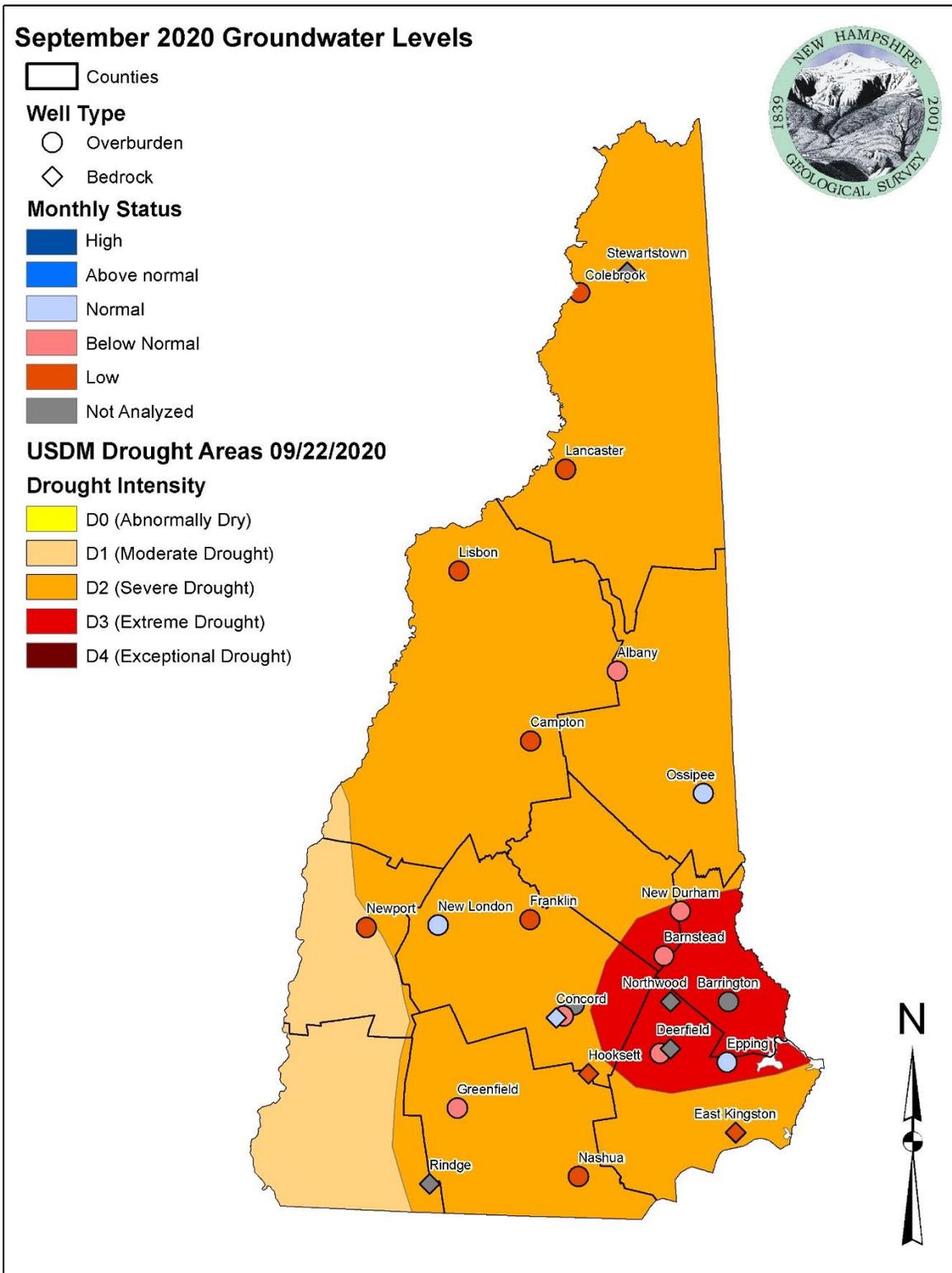
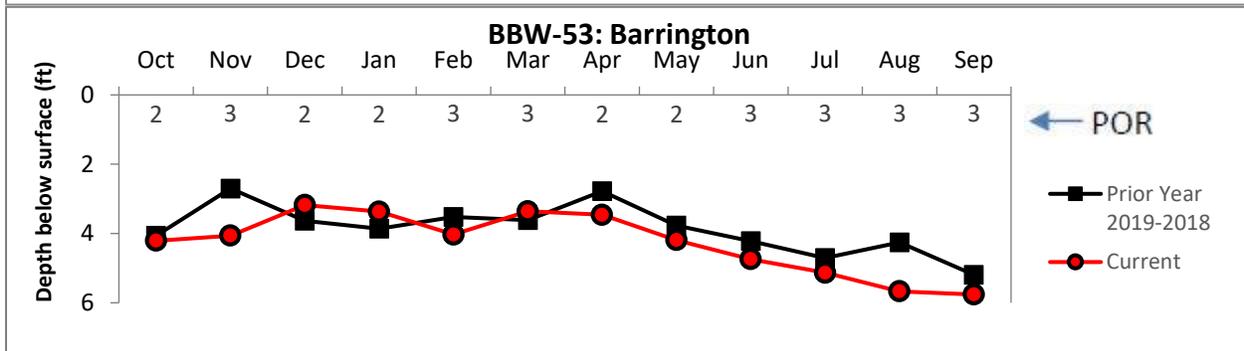
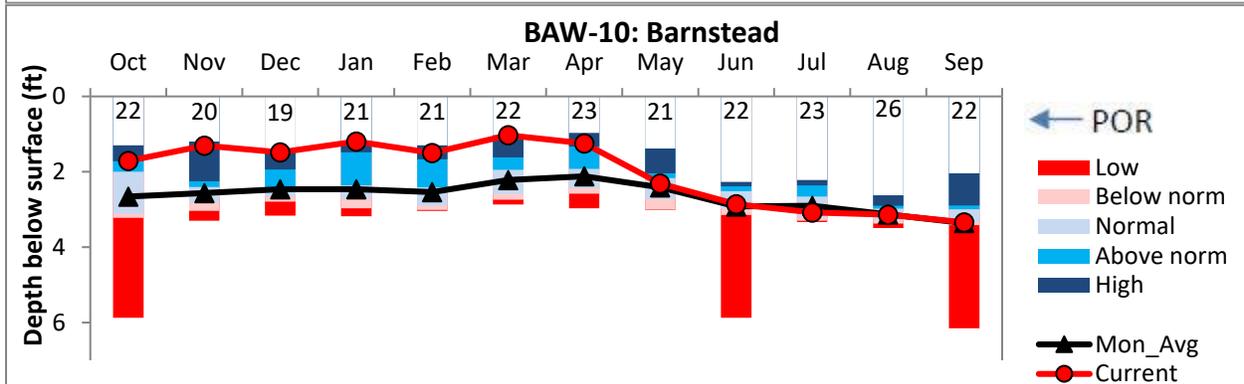
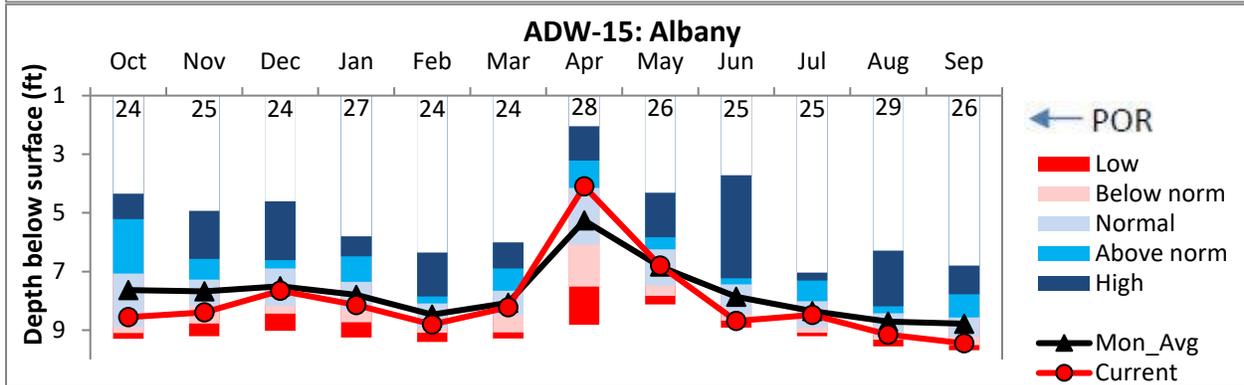
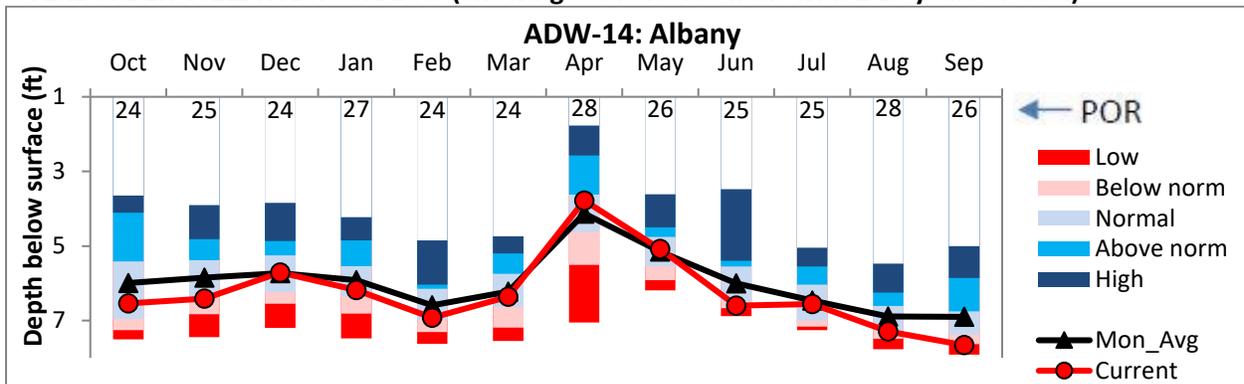
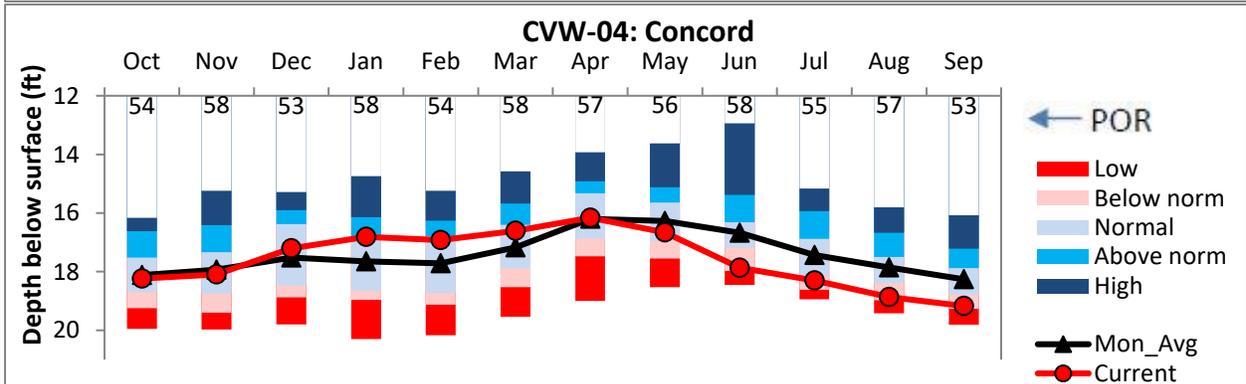
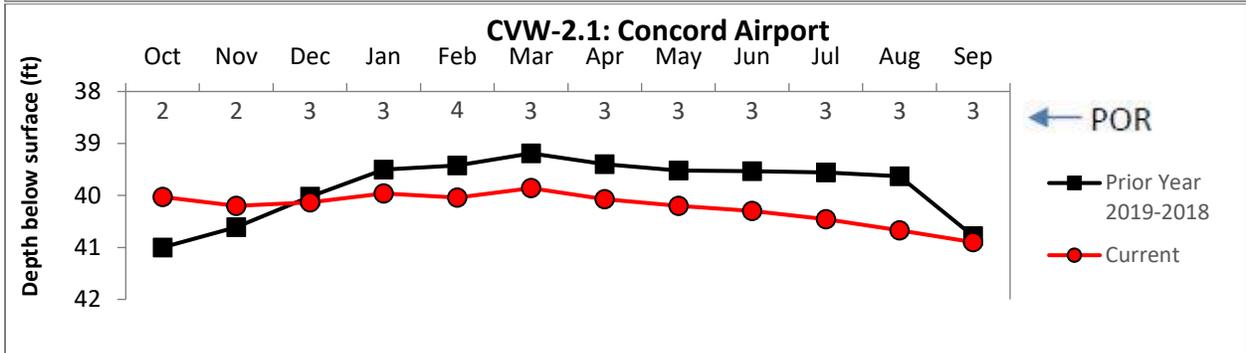
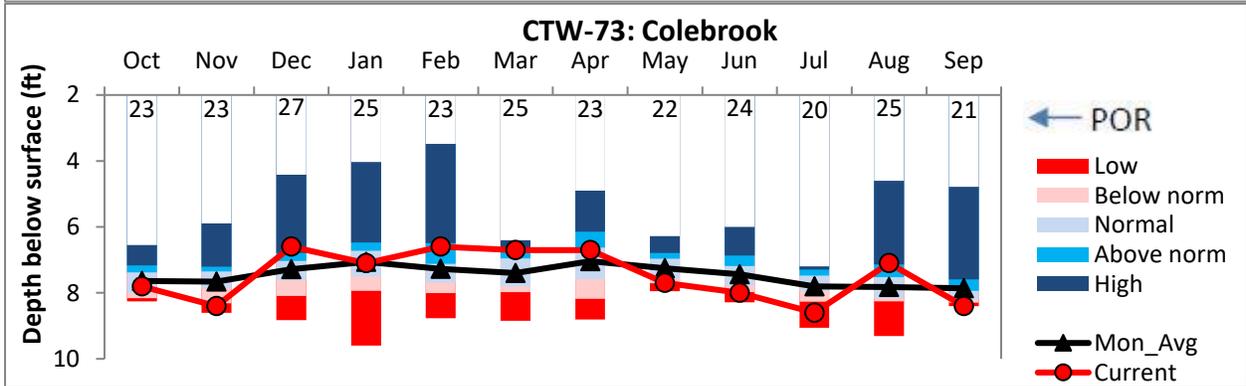
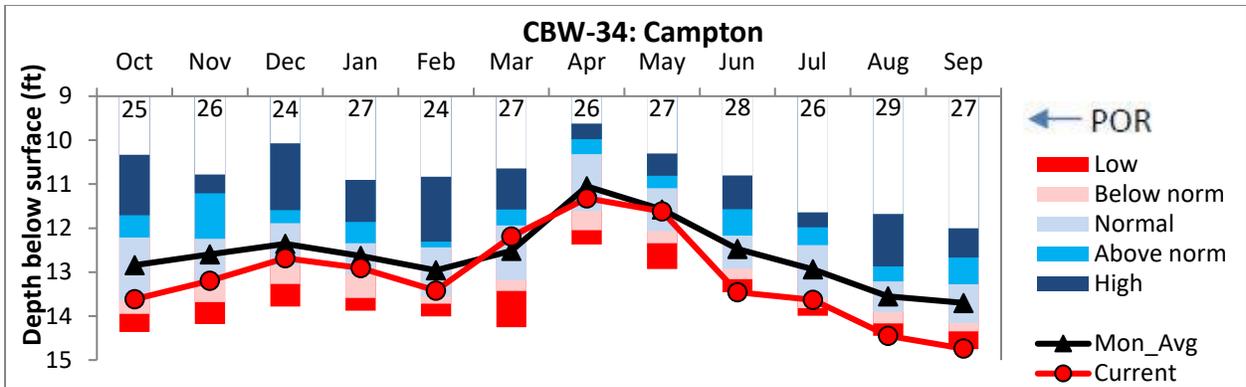
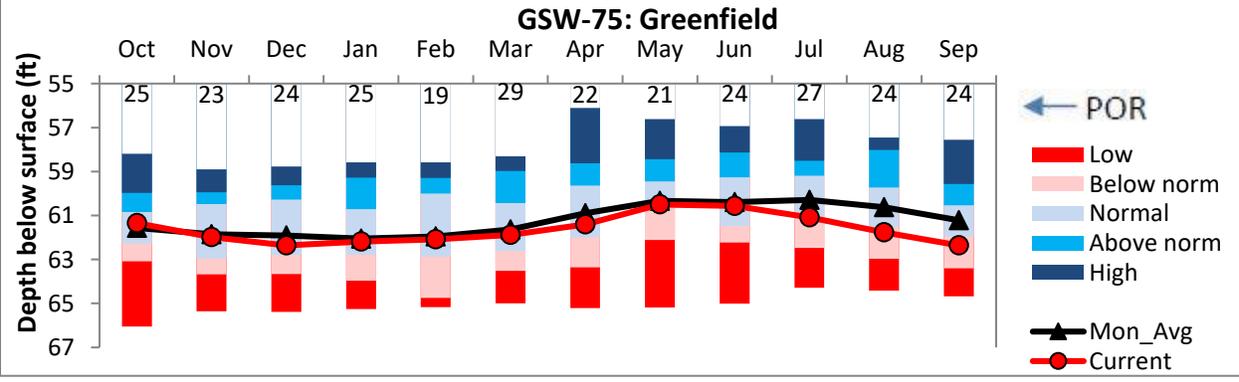
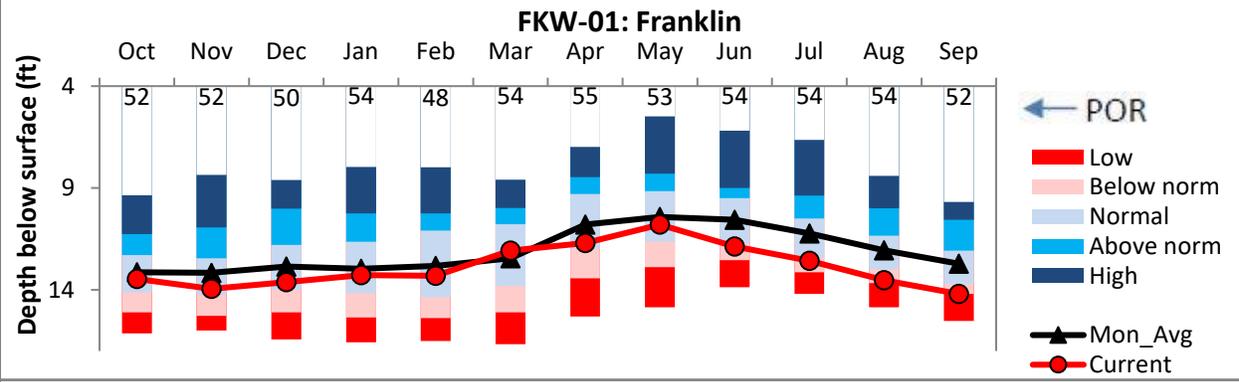
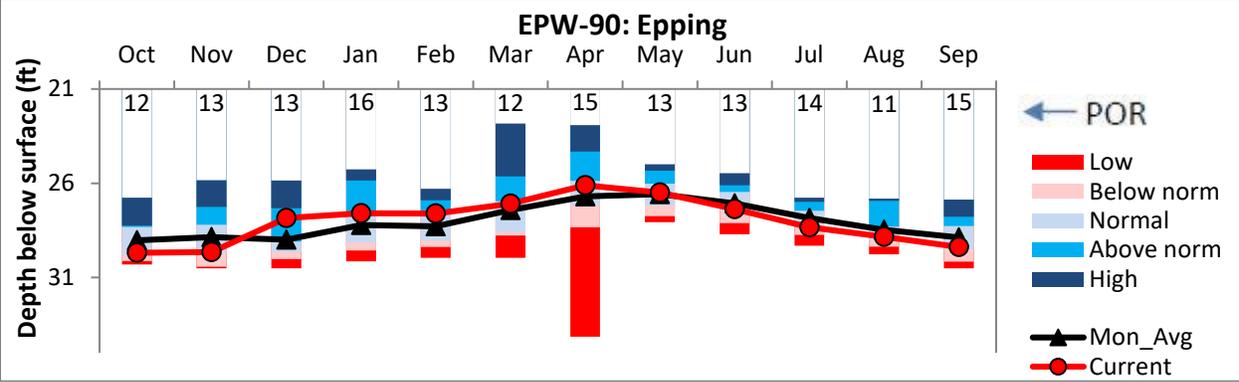
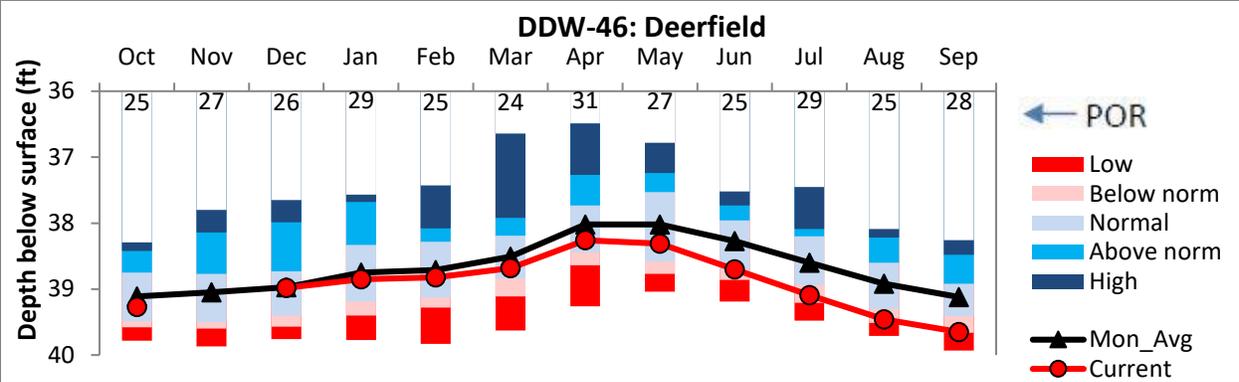


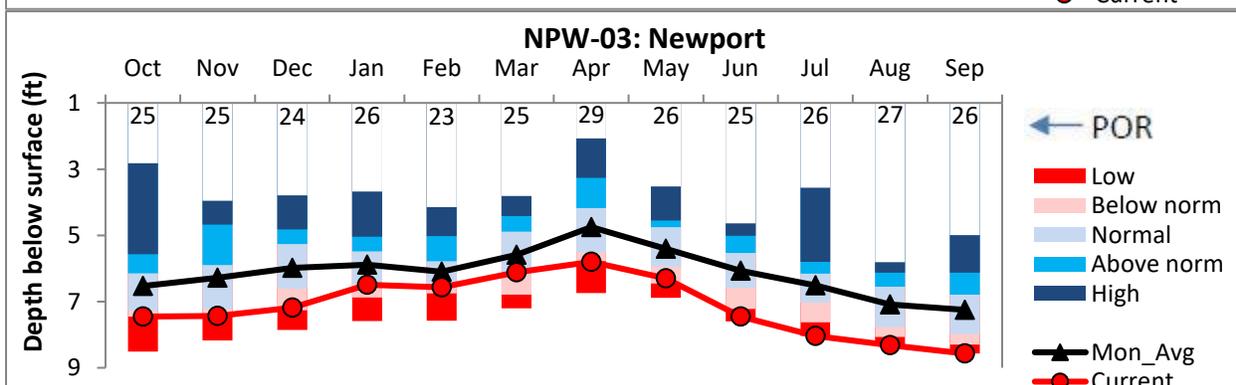
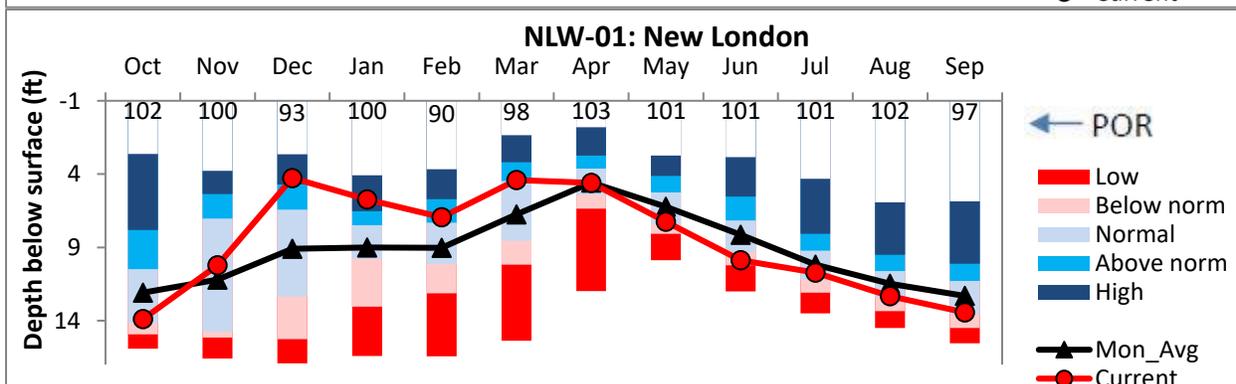
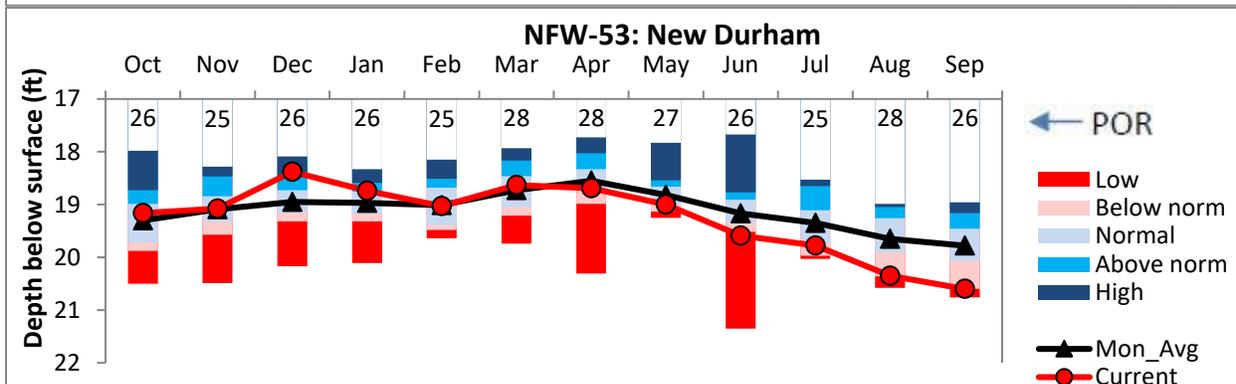
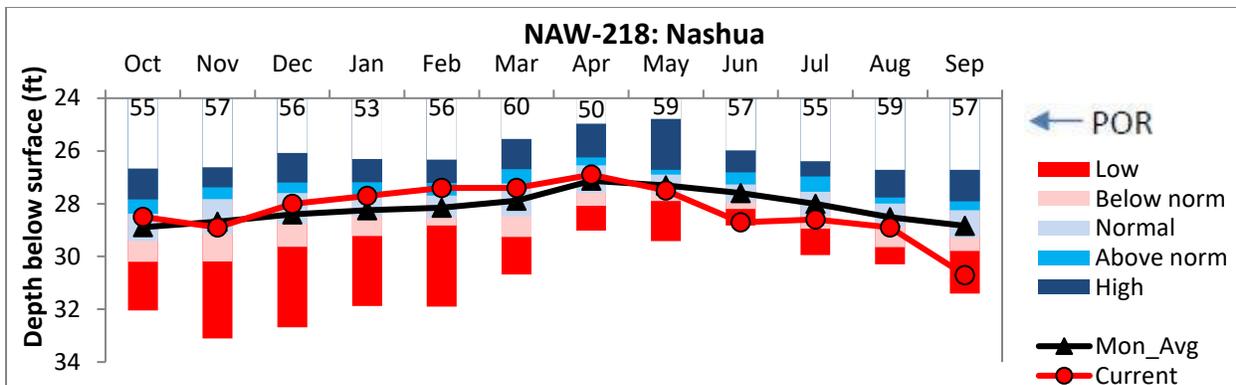
Figure 2. Groundwater Monitoring Network showing groundwater levels relative to statistical envelopes calculated over each well's period of record (POR) and drought areas according to data released by the [U.S. Drought Monitor](#) on September 22, 2020.

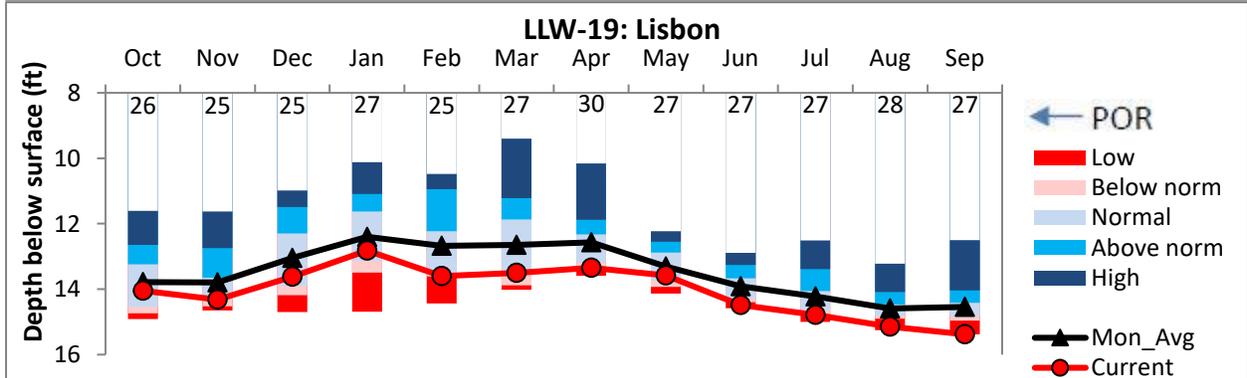
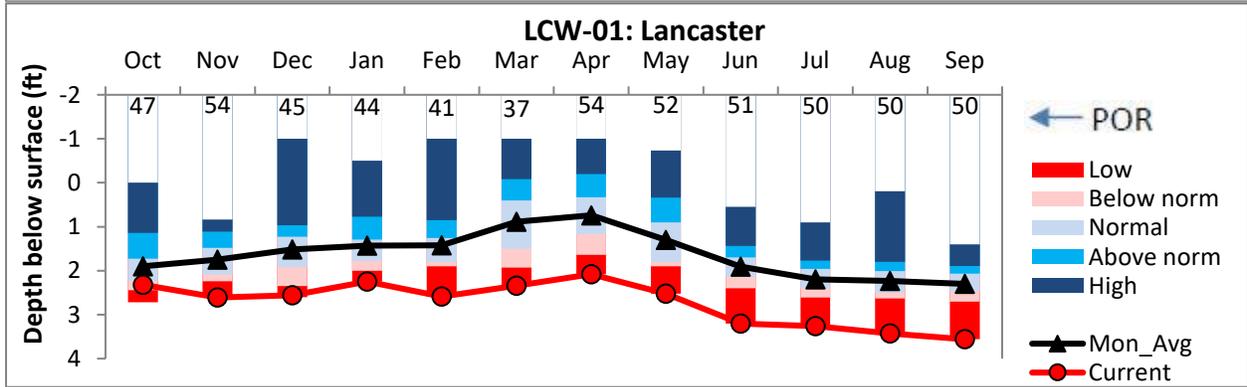
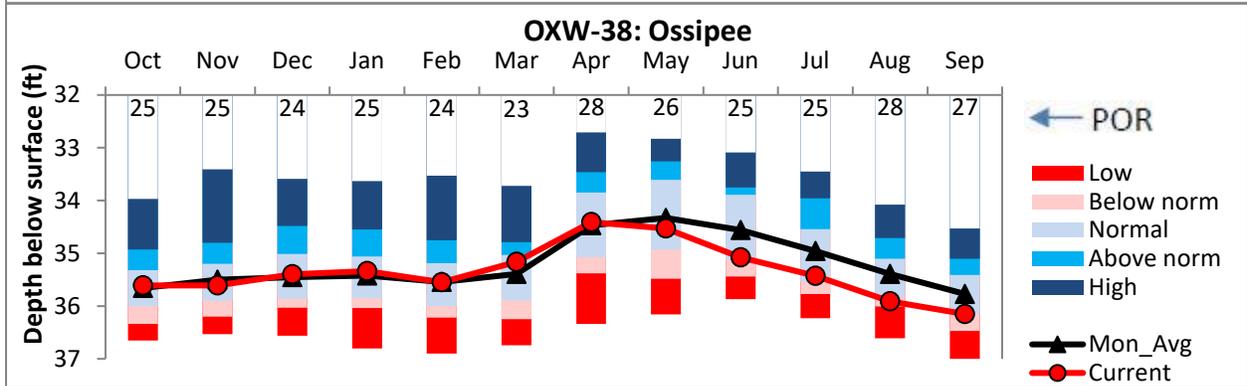
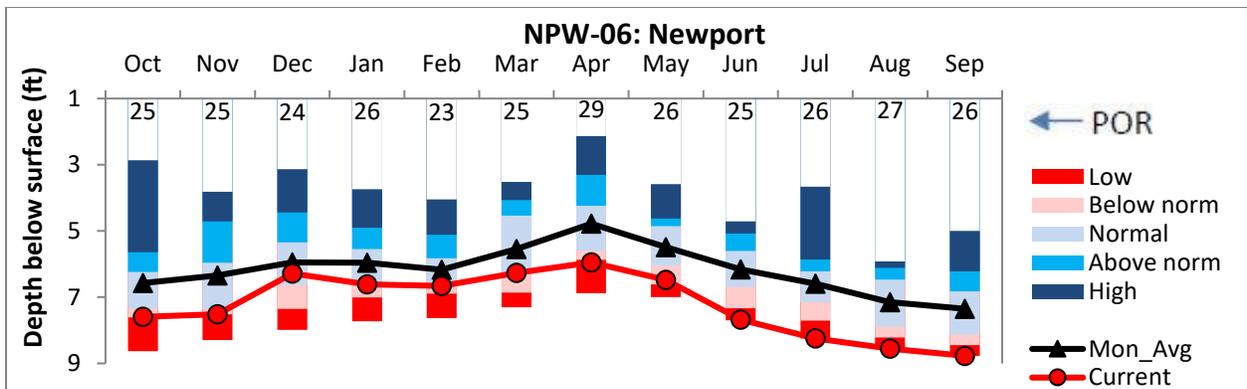
OVERBURDEN WELL HYDROGRAPHS (Showing statistics for wells with ≥ 10 years of data)



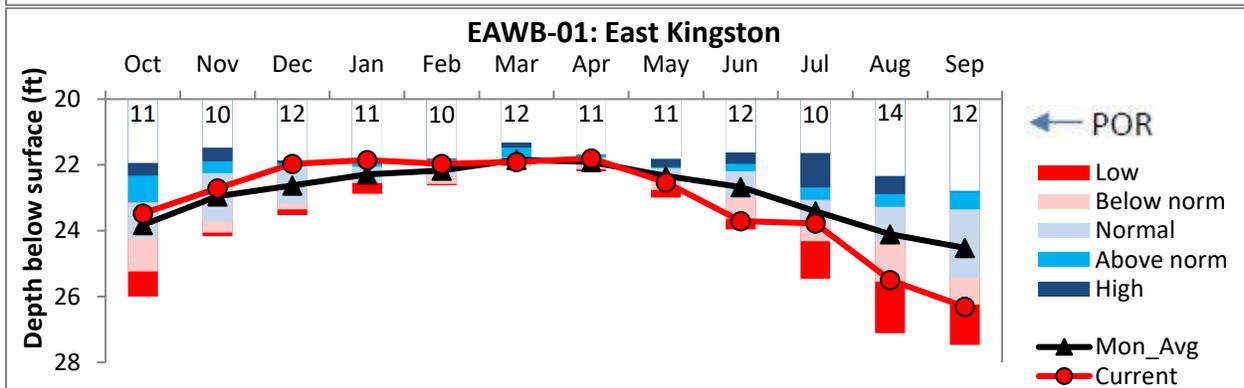
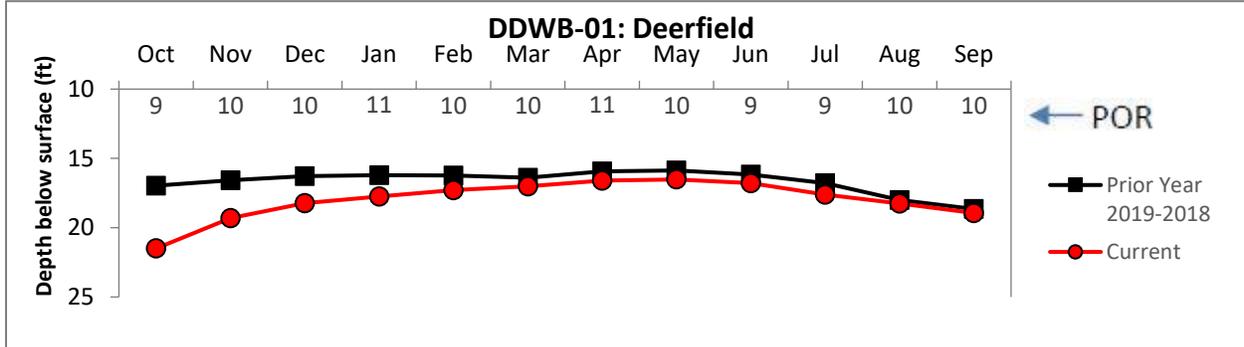
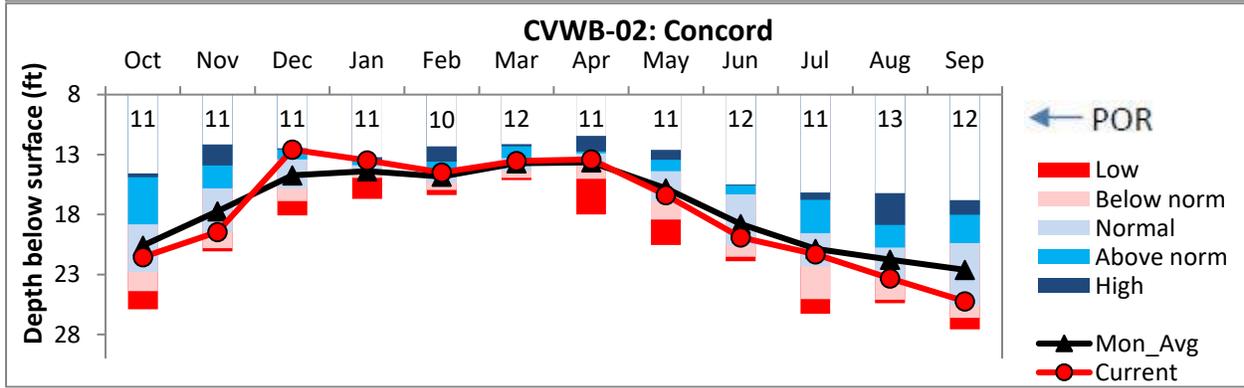
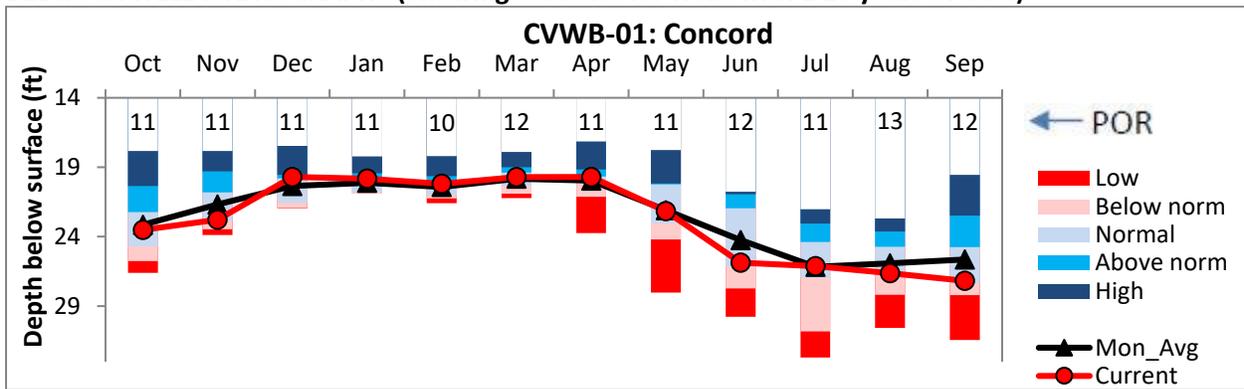


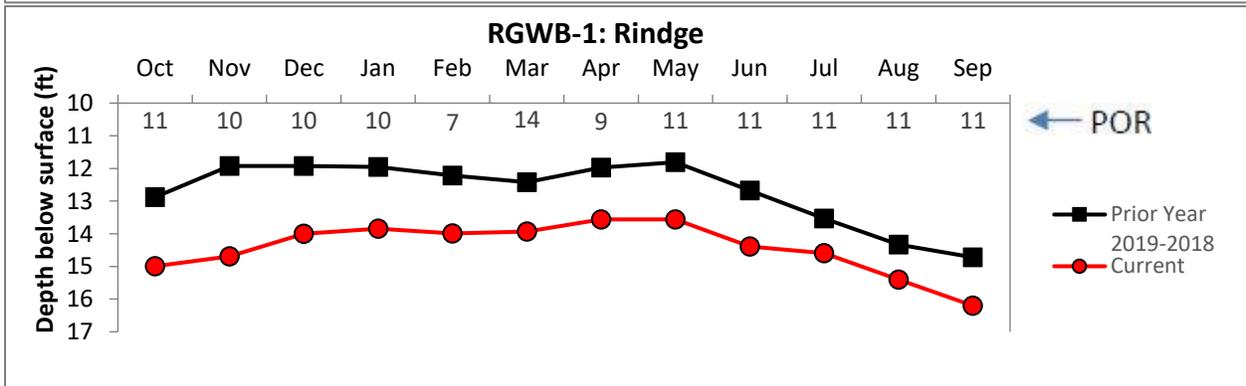
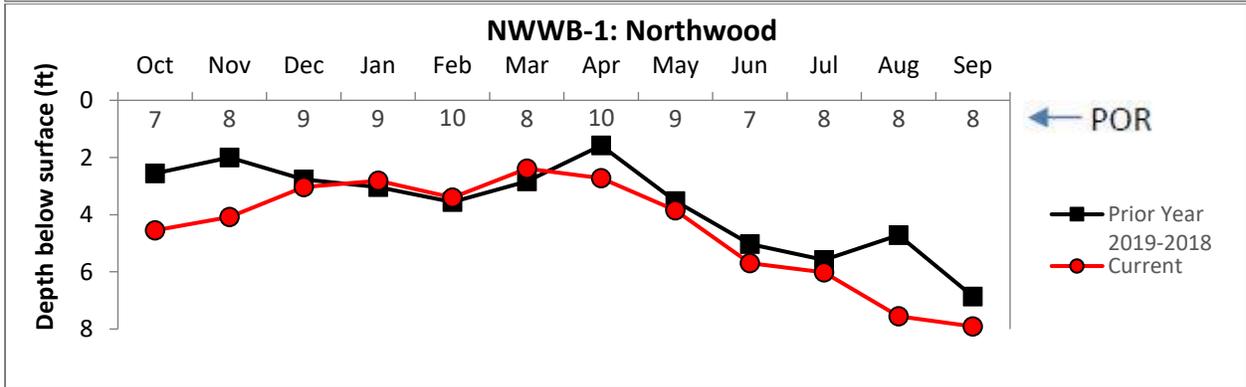
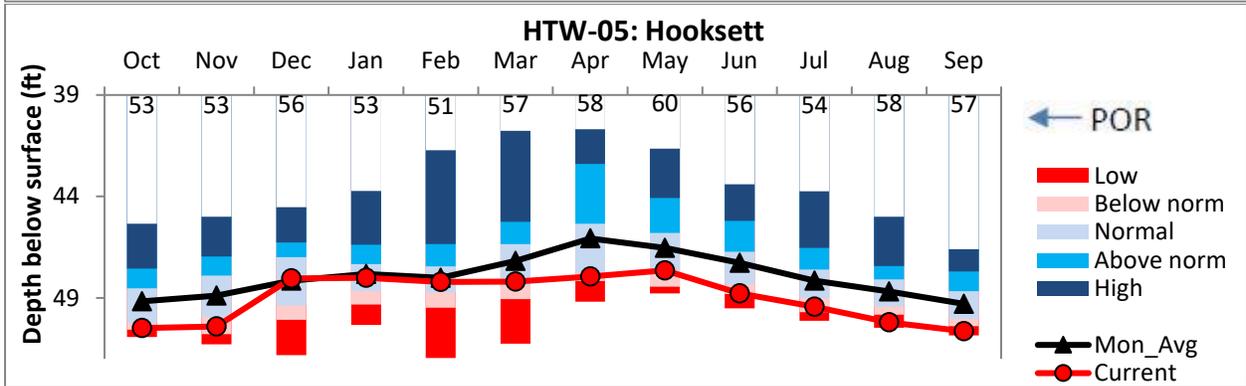
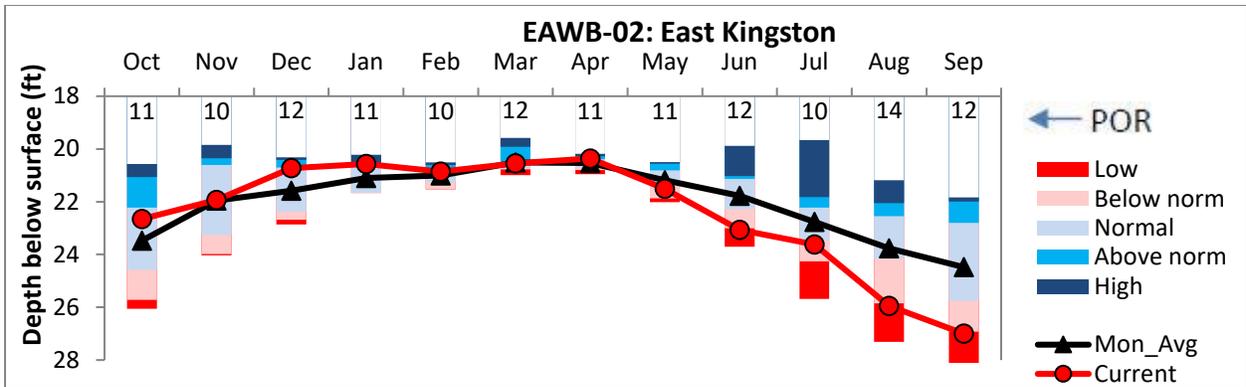






BEDROCK WELL HYDROGRAPHS (Showing statistics for wells with ≥ 10 years of data)





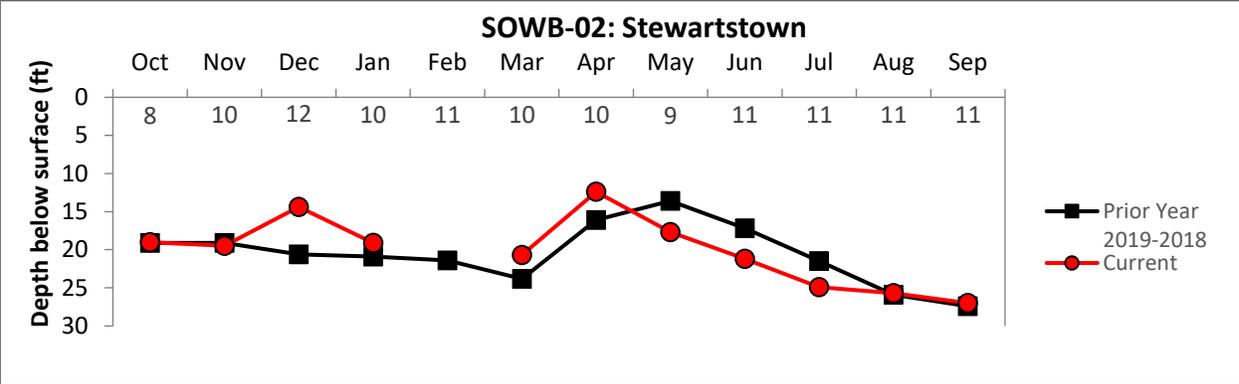
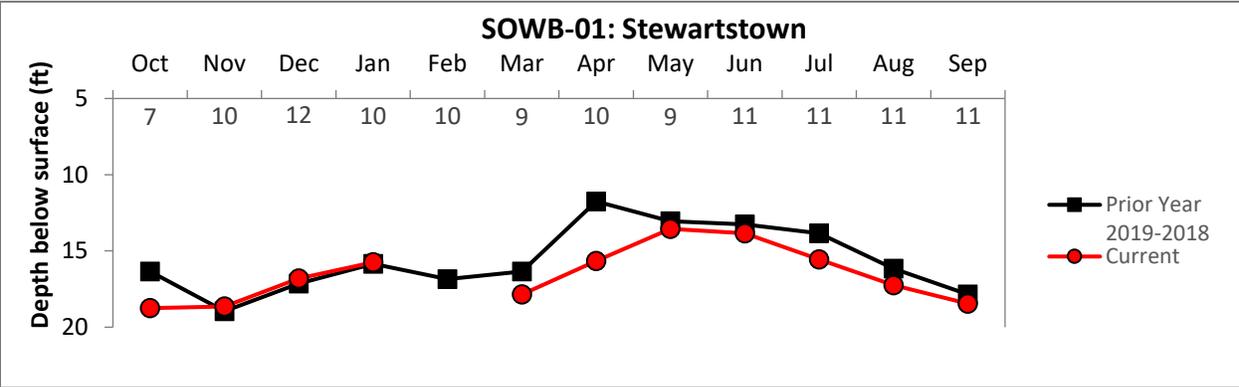
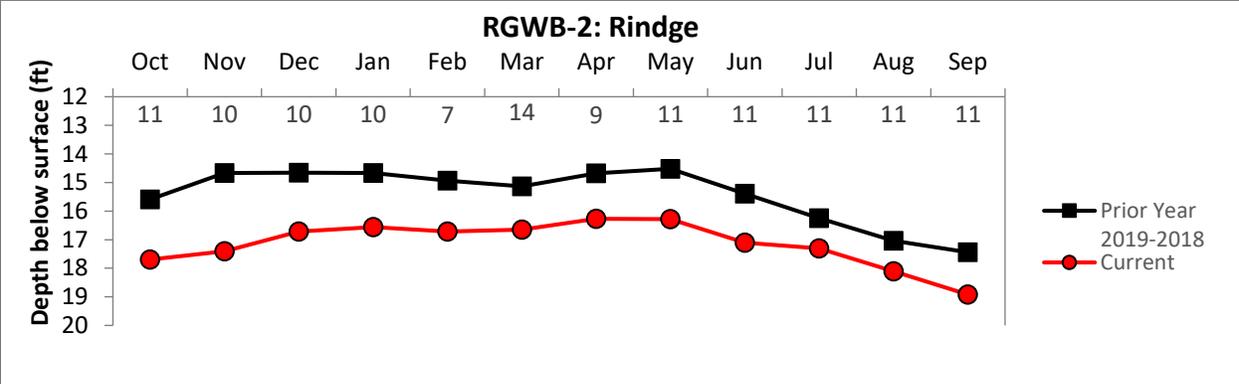


Table 1. Summary of groundwater levels sorted by region (dark blue – high, blue – above normal, light blue – normal, pink – below normal, red – low).

Well	Town	Well type	Screen/ open Interval (ft)	Depth to Water (ft)	Monthly Average (ft)	Current Status	Departure from Avg. (ft)	Change since last month (ft)
ADW-14	Albany	Overburden	77.5-79.5	7.66	6.9	Low	-0.76	-0.37
ADW-15	Albany	Overburden	16-18	9.45	8.78	Below norm	-0.67	-0.3
BAW-10	Barnstead	Overburden	23-25	3.34	3.36	Below norm	0.02	-0.2
BBW-53	Barrington	Overburden	21-23	5.76	-	Not Analyzed	-	-0.09
CBW-34	Campton	Overburden	21-23	14.74	13.7	Low	-1.04	-0.29
CTW-73	Colebrook	Overburden	105-107	8.4	7.86	Low	-0.54	-1.3
CVW-02.1	Concord	Overburden	59.8-61.8	40.9	-	Not Analyzed	-	-0.23
CVW-04	Concord	Overburden	25-27	19.17	18.26	Below norm	-0.91	-0.3
DDW-46	Deerfield	Overburden	59.8-61.8	39.65	39.12	Below norm	-0.53	-0.19
EPW-90	Epping	Overburden	39.45-40.7	29.38	28.88	Normal	-0.5	-0.54
FKW-01	Franklin	Overburden	45.5-47.5	14.2	12.72	Low	-1.48	-0.67
GSW-75	Greenfield	Overburden	35.8-37.8	62.36	61.22	Below norm	-1.14	-0.6
LCW-01	Lancaster	Overburden	28-30	3.56	2.3	Low	-1.26	-0.13
LLW-19	Lisbon	Overburden	49.8-52.3	15.38	14.54	Low	-0.84	-0.23
NAW-218	Nashua	Overburden	66-68	30.7	28.84	Low	-1.86	-1.8
NFW-53	New Durham	Overburden	28-30	20.6	19.78	Below norm	-0.82	-0.25
NLW-01	New London	Overburden	40-42	13.44	12.31	Normal	-1.13	-1.11
NPW-03	Newport	Overburden	40.5-42.5	8.57	7.25	Low	-1.32	-0.25
NPW-06	Newport	Overburden	58-60	8.77	7.35	Low	-1.42	-0.22
OXW-38	Ossipee	Overburden	0-22.55	36.15	35.77	Normal	-0.38	-0.24
CVWB-01	Concord	Bedrock	470-480	27.18	25.64	Normal	-1.54	-0.54
CVWB-02	Concord	Bedrock	0-315	25.23	22.61	Normal	-2.62	-1.91
DDWB-01	Deerfield	Bedrock	0-300	18.94	-	Not Analyzed	-	-0.68
EAWB-01	East Kingston	Bedrock	463-473	26.31	24.52	Low	-1.79	-0.81
EAWB-02	East Kingston	Bedrock	0-323	27	24.48	Low	-2.52	-1.05
HTW-05	Hooksett	Bedrock	0-102.7	50.64	49.29	Low	-1.35	-0.44
NWWB-01	Northwood	Bedrock	0-130	7.91	-	Not Analyzed	-	-0.36
RGWB-01	Rindge	Bedrock	391-401	16.2	-	Not Analyzed	-	-0.8
RGWB-02	Rindge	Bedrock	0-285	18.92	-	Not Analyzed	-	-0.81
SOWB-01	Stewartstown	Bedrock	443-453	18.45	-	Not Analyzed	-	-1.2
SOWB-02	Stewartstown	Bedrock	0-303	27	-	Not Analyzed	-	-1.3